DESIGN AS A FUNCTIONAL LEADER: A case study of Philips to investigate the potential of design as a leading functional discipline.

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Abstract

This research investigates the role of design as a functional leader in multinational industries, to drive innovation successfully at a strategic level. It involved a detailed case study of the innovation process, and practices within Philips Design based in Eindhoven, The Netherlands, where design is a key decision making function within the company but not yet recognised as a leading discipline at strategic level. Philips Design wanted to use design research to build an integrated map of its actual practices and correlate these with other corporate innovation practices, to help establish strategic recognition for their value. The doctoral challenge was to explicate the process and determine whether the findings have generic capacity to support the role of design as a functional leading discipline.

The investigation integrates an iterative loop of; abductive reasoning of design thinking and inductive reasoning of management thinking in an action research cycle. The case study was part of an empirical enquiry, where the researcher became a participatory observer at Philips Design, conducting one-on-one interviews for data collection and refining their analysis using a Delphi

Technique. Three other multinational organisations were explored to take into account how each perceives the contribution of design and the different roles it plays in their organisation. Data triangulation was also used to validate findings with a third party expert.

The research contributes to knowledge by confirming the conditions for design to act as a leading functional discipline. It shows that design cannot be the only functional lead for a multinational organisation. It identifies the major reason for this as the difference between thinkers trying to find viable options for the future and practitioners trying to defend the core business in their organisation, resulting in a gap between strategy and operation. The research further elaborates on the reasons for the gap to exist through qualitative conceptual relationships between designer behaviour and organisational culture in the different innovation cycles that exist in the organisation.

KEYWORDS: Design Leadership, Innovation, Design Innovation, Design strategy

Introduction

This paper derives from a programme of doctoral research that investigated if design could be established as a leading functional discipline[1] in multinational organisations[2]. The desire to conduct this research was driven by an opportunity to work on a nine-month internship to map the innovation culture of Philips Design[3], while being a part of their strategic team called Research Development and Innovation (RD&I). Philips Design, based in Eindhoven, The Netherlands, is a good example of an organisation that recognises design's value as a function[4] and wants to establish it as one of the leading functional disciplines in the Philips Corporation. The focus of this paper is therefore the study of this aspiration within Philips Design.

[1] Leading Functional Discipline – Refers to a concept where design discipline holds functional leadership role in organisations by establishing an explicit process for successful leadership. While holding this role the multidisciplinary design team leads the organisation and collaborates with other recognised disciplines while doing so. See: Aftab, M. (2012) & Adair (1990).

[2] Multinational organization – Dictionary (oxford) defines multinational as an adjective and a noun stating; an organisation operating in several countries. In this study, I use multinational to define organisations as having several research and development centers around the world despite its headquarters being in the city of its origin.

[3] Philips Design - Philips Design specifically indicates the team called Research Development and Innovation (RD&I) and the design function within the Philips Corporation.

[4] Function – Design function represents design being recognised as a core discipline in any organisation. Any organisation recognizing design as a function gives it equal importance in comparison to other functions like R&D, technology, strategy etc. Design as a function is able to add more value to the decision making of an organisation than when it is in a support role or acting as a consultant discipline. See: Ling, B. (2009) What role does design play within your organisation? *In:* Bobby (ed.) Design leadership. Design sojourn.

The study reviewed the RD&I design innovation process being applied using 'design driven innovation' (Verganti, 2009) at the strategic corporate level in Philips, to make and develop future propositions in the hope of establishing itself as a leading functional discipline. Despite this operational platform and approach, design functional leadership was found to be full of problems of ambiguity, discontinuity, lack of alignment and ownership. The study concluded with an innovation process map, explicitly defining the actions and problems at each step of Philip's value proposition and development process (Aftab, M., 2012).

The finding was correlated by questioning the way design worked in three similar multinational organisations; Company A, a consumer goods company based in Finland, Company B an airline manufacturing organisation and Company C an automotive manufacturer both based in Germany. This paper compares differences in the thinking of these three multinational organisations with the detailed case study within Philips Design and the role of RD&I.

The study concludes that design can only be an effective function if it is recognised by other core functions of the organisation. Additionally, the design function cannot be aligned with strategic level leadership and given the status of a functional leader.

Functional Leadership Theory (FLT) and its Practice

FLT was first developed at the Royal Military Academy, where training in the responsibilities of leadership was a part of a programme for officers. The training was later transferred to business organisations and was famously known as Action-Centered Leadership (ACL). Adair (1990, p. 9) provides the initial theory for action-centered leadership stating:

> *"...I have developed the idea that working groups resemble individuals in that although they are always unique...yet they share, as do individuals, certain common 'needs'. There are three areas of need present in such groups. Two of these are the properties of the group as a whole, namely the need to accomplish common tasks and the need to be maintained as a cohesive social entity... The third area is constituted by the sum of the individual needs of group members."*

Adair (ibid p. 13) identifies that the three areas of need overlap and influence each other. He mentions,

> *"The value of the three overlapping circles is that they emphasize the essential unity of leadership: a single action can be multi-functional in that it touches all three areas."*

Adair (ibid p. 13), pinned down a single list of leadership duties representing its functional characteristics. He claims that the list would help in navigating through the overlap of group needs and individual needs. This list was adopted from the Royal Military Academy

Sandhurst, which has been useful in many other organisations. Adair's (ibid) list indicates the following;

"The list of leadership functions:

- *Planning*
- *Initiating*
- *Controlling*
- *Informing*
- *Evaluating"*

Since Adair's (ibid) version of ACL/FLT, scholars have interpreted it differently. Zaccaro and Klimoski (2001, p. 24) identify three relationships to the success of functional leadership and other models of team leadership. The first, focuses on functional leadership as a boundary role linking teams to their environments; the second, suggested that leadership functions are necessary when there are problems within the team, and the third, functional leadership is defined by behaviour that assists the team in problem solving (2001, p. 24). Zaccaro and Klimoski (ibid) developed a framework that states:

"Leadership influences team effectiveness via its effect on team processes. i.e., cognitive, motivational, affective and coordination". The leader functions that have an impact on team effectiveness are:

Information search and structuring,

Information use in problem solving,

Managing personnel resources,

Managing material resources."

The Air Training Corporation (2010), another company that is using functional leadership in its strategic management states that:

"The functional approach to leadership is the ability of a leader to manage a group to complete a task whilst keeping the group working as a team or developing the group into a team and satisfying the requirement of the individual group members".

Where Kotter (1998) believes that generally leadership connects the vision of a leader to the alignment of employees at the bottom of the hierarchy; Musa[5] (2010) develops the theory

[5] Musa, M. (2010) Analysing leadership theory in a social psycological perspective. *In:* Astuti, D. S. R. (ed.). Bandung: Padjadjaran University. A PhD student in Indonesia researches on adolescent sexual behaviour, in relation to value-systems. His paper on functional leadership is relevant to the study and has thus been used extensively. However, I would like to point out that the context of his study is different from the current research.

provided by Dreikorn (1961) and claims that FLT is a model that concentrates on how leadership occurs. Dreikorn[6] (1961) stated;

> *"In the functional leadership model the functional disciplines are enablers, not executers, of process...with the functional disciplines and process executers aligned throughout the processes, their primary focus is consistency in action, integration throughout the system, and sustainability of performance."*

This theory is very commonly used in practice in organisations like Lufthansa, Philips Design, and Company A, though it might not be known by the same term. Philips Design integrates design in its functional leadership development programme by using 'design driven innovation', (Verganti, ibid), to drive creative exploration and collaborative instigation. The innovation strategy at Philips Design is further communicated through the story of 'horizons' (Figure 1).

These horizons are derived from a 4/4-matrix diagram used by organisations relevant for this study for creating innovation strategies. Figure 2 shows how Philips Design places these innovation cycles in relation to time (x axis) versus market life cycle (y axis), to analyse where new ideas could be placed and what product life cycle it could belong to, in relation to time.

These horizons work in three different time spans and each horizon has a dedicated set of designers. Designers working in Horizon 1, defend the core business, by doing projects that have to come into the market between zero to two years following a bottom-up approach[7]. Horizon 2 should be a comfortable path towards the future, but on the contrary, a big gap exists between the present and the future. This is due to the involvement of other stakeholders, unknown to design, and oblivious to design activities. Horizon 3, works with ideas that create viable options for the future run by the thinkers following a top to bottom approach[8]. These horizons are superimposed with a Gartner's Hype Cycle[9]. This is done to

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[6] Dreikorn, M. J. (1961) Integration. *In:* Dreikorn, M. J. (ed.) *The synergy of one: Creating high-performing sustainable organizations through integrated performance leadership.* Milwaukee: ASQ. – There is a lack of horizontal alignment between functions in an organisation when it is structured under functional leadership. This theory provides tools like 'homeroom leadership' for the alignment to be made possible while maintaining the characteristics of a functional leadership structure.

[7] Bottom-up approach: Refers to incremental innovation on product cycle, which has the ownership of the practitioners. The practitioners defend the core businesses creating innovation required in the market in the span of 2 years. With a short time span to work on bottom-up approach has its own rules, processes and teams that defines that cycle. See: Aftab (2012).

[8] Top-to-bottom approach: Refers to breakthrough innovations on product cycles which have the ownership of the thinkers. The thinkers are strategists who are responsible for exploring future value spaces and proposing ideas for emerging markets. Once an idea is proposed it goes down to the practitioners to be rolled out in the market in a suitable time and market. See: Aftab(2012).

[9] Gartner's Hype cycle: Refers to the social applications to specific technologies. These cycles can separate hype from reality and help strategic leaders to decide whether or not particular technology is ready for adoption. The hype cycle is driven by two factors: human nature, and the nature of innovation. See: Fenn and Raskino (2008).

study why there is a gap, between the thinker's top-to-bottom approach, and the practitioner's, bottom-up approach.

Though other functions have adapted to the functional leadership programme[10] at Philips, empirical evidence suggests that design struggles in its role as a leader due to the gap in horizon two.

Design and its Strategic Roles

Design provides the benefits of creativity (Fujimoto, 1990), interpretation (Schmitt et al., 1995), communication (Trueman and Jobber, 1998) and integration (Nelson and Winter, 1977, p. 150) beyond just observation, and makes the observations and explorations visible to the organisation. Trueman and Jobber (1998) grouped the role of design in an organisation into four dimensions; value, image, process and production.

Design has been famous for two predominant roles at the strategic level of an organisation; first, for being a product and services differentiator and second, providing valuable contributions of design to organisational structure. Regrettably, Stevens et al. (2008, p. 2) state

> *"...Much business strategy literature predates or neglects these trends, and in the empirical literature of design management they are often discussed under the catch-all of 'strategic."*

Lorenz (1994 p. 33) gives the example of the chief design officer for Sony in 1980's who had been given an additional duty of coordinating the developments of products. This showed that industrial designers in their most traditional sense were highly multidisciplinary and could play the role of unique glue for a corporate process of product development. At Philips, design takes up a similar multidisciplinary approach when it is aligned directly to the Philips Innovation Board[11] (PIB) comprising the head of all recognised functions namely technology, strategy, marketing, and design (Figure 3).

According to Gardien (2009),

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[10] Functional Leadership Programme – A programme developed in order to align all functions within Philips. This programme establishes design as one of the leading functional disciplines. It requires design to align its activities and processes explicitly within the Philips innovation framework. Within this programme all strategic level processes, core level processes and support processes are audited. In: Gardien, P. (2008a) Company innovation program 2009. Eindhoven: Philips B.V.

[11] PIB – Philips Innovation Board also known as PIB at Philips, which comprises of the head of the recognised functions along with the CEO of the organisation. These recognised functions at Philips are: strategy, technology, marketing/futures, and design. This committee takes important decisions of the organisations innovation strategy that is then transferred to the RD&I team. See: Gardien, P. (2008). *RE: Design research for innovation.* Type to Design, P.

"The PIB operated at the strategic level where the chief design officer formulated design strategy in accordance with other members of the team. The PIB then connects to the rest of the organisation through its core processes run by the RD&I innovation process of value proposition and development."

Philips Design claimed itself to be 'technologically driven' but the corporate policy pushes a brand driven strategy through all its functions. This is done to promote brand image and the essence of 'sense and simplicity' through all levels of the organisation. According to Brand, R. (2009),

"The involvement of design in the core processes of 'value development and proposition' for Philips led to the 'brand' becoming a priority in the construction of its process."

This is further highlighted in Philips Design's, Innovation Architecture (Figure 4) that describes the psychology behind making brand as the internal strategy to keep all levels connected to the main essence of the organisation.

Supporting this philosophy, Abbing (ibid) believes that combining design and design management to the brand's ability to connect, leads to transformation of abstract ideas into reality. In the past brand has been linked to logo design. It is only recently that brand is being talked about as a strategy that belongs to top-level management. Branding is seen to have a connecting feature that holds together the inside and outside world of organisations with their innovation and marketing functions.

Additionally, Kapferer (2004) & Olins (1978) discussed the gap between the company's identity[12] and image[13], and they claimed that New Product Development (NPD) could be used to bridge this gap. This embedded the use of design in branding further in conveying identity to consumers by its 'products, people, places, and communication' (Abbing and Gessel, 2008, p. 10). Olins (1988, p. 56) took a more traditionalist approach and stated that,

"A product is a message, environments and literature affect the issue peripherally but it is primarily the product that dominates and conveys the identity idea."

In corporations like Philips, innovation guides business direction, this is in line with their mission and strategy (Gardien, 2009). Brand, R. (2009) believes that the innovation architecture promotes the concept of brand leadership, not in the conventional sense of branding, but in the sense that brings out the essence of the values, of the organisation through

[12] Brand identity –refers to the essence of the brand that comes when the external environment of the organisation is in perfect harmony with the different internal functions of the organisation, especially marketing and innovation. See: Abbing, E. R. (2010) *Brand-driven innovation: Strategies for development and design,* CH, Ava Publishing, 12.

[13] Brand Image – refers to the face value of the brand towards its customers through its visual tools like logo etc. See: Lury, C. (2004) *Brands: The logos of global economy,* Abingdon, Routledge, 63-65.

its products, and adds meaning of 'sense and simplicity' in its customers lives. Brand, R. (ibid) states that,

> *"It puts design in a position, to guide the corporation towards, the achievement of brand leadership by connecting the company with its users. Following which organisations form a better understanding of their positioning in the different identified marketing platforms in the lifestyle mapping (Figure 5)."*

Philips Design has developed a sound understanding of the evolution of the economy from the industrial economy to transformational economy and the importance of design leading this evolution. Brand & Rocchi (2011, p. 11) claim that Philips presently stands in the knowledge economy, where

> *"Knowledge is not just a string of information but is constructed socially, discussed and shared".*

Brand and Rocchi (2011, p. 8) further state that,

> *"These emerging paradigms in value creation have far reaching consequences for the future vitality and comprehensiveness of organisations. Many companies naturally tend to create future strategies and innovation roadmaps based only on their existing paradigm, which often does not exploit the full potential available".*

The study confirmed that Philips is moving through the 'experience economy' and Philips Design aims to leap to the 'transformational economy' in the coming decade. With the marketing paradigms recognised, the Philips Design team tries to use the initial steps of their design innovation process to establish 'value spaces' (Brand, 2009). These 'value spaces' are the themes of the future, which the company works on. Unfortunately, despite having immense knowledge to drive innovation through design, the gap in the 2nd horizon takes a toll on these efforts and leads to loss of ideas and slow innovation.

Methods

The research started with a field study, which involved an internal project with the RD&I team to define, refine, and explicitly communicate the innovation process of Philips Design at the strategic level. The methods that were used for the research are chiefly inspired and informed by the works of; reflective practice, (Schön, 1983), creative mapping techniques (Buzan and Buzan, 1989); and radical constructivism (Glanville, 2005). Figure 6 illustrates the phases and the reflective loops in the research design.

The case study investigated the role of design function under the functional leadership programme at Philips Design, while it led the organisation into creating a knowledge based creative portfolio. This was done while mapping the innovation process and its practices in a multinational organisation, to promote reflection, understanding, ownership, and refinement

by stakeholders within the organisation. As stated earlier, the case study highlighted the existence of a gap between the thinkers who find new options for the emerging business, and practitioners who work to defend the core business. Keeping that in mind, these two groups of people were questioned separately.

Further, three companies were selected and explored and their data was compared and contrasted and then triangulated with the third party expert to validate the outcomes.

The research used mixed methods to collect and analyse data (Figure 7). The data collection methods included; case study (Yin, 2003), Delphi technique (Sackman, 1974), one-on-one interviews, and extensive literature review grouped together under an action research cycle. The data validation process includes exploration of other organisations and data triangulation with a third party expert. The qualitative nature of the data, led to a, complex data analysis supported by 'designerly' methods of mapping (Saikaly, 2005; Yee, 2009).

Findings

It took ten years for Philips Design to transform design from a contract-based[14] entity to a recognised function. The most important aspect of design's role at Philips was its formal establishment as a function and promotion as a leading discipline. Philips Design was able to do this by including design's contribution in Philip's functional leadership program, which aimed to align all the leading functions together at the strategic level. The main purpose of this program was to enable each of the important functions, such as, technology, futures, business, design and R&D to be integrated to the corporate mission.

As mentioned, the function of design at Philips was involved in conducting 'value proposition and development' for the corporation. This enabled design to perform one of the core processes. The core process involved the RD&I team at the strategic level to develop proposals for an innovation portfolio for Philips that enhanced the brand image of the organisation. Figure 8 depicts the positioning of the core process of 'review, plan and development of value contribution' being run by the RD&I team, which integrated design within the business.

The core process carried out by RD&I ran under the strategic process, itself carried out by the PIB involved in reviewing and developing design strategy for Philips. These important decisions were then transferred to the RD&I team for development and proposition of value for the creation of a creative portfolio.

[14] Contract-based – Design is not a part of the organisational structure but works as an external entity. Design as a contract-based entity is called in to work on specific projects over a limited time period. The designers do not have any control on how the organisation works and no role in formulating strategy. It was only in 2008 that Man and Jung introduced the idea of design contributing to organisational strategy while being a contract-based entity. See: Man, K. Y. & Jung, M. J. (2008) Bottom-up design leadership as a strategic tool. *Design Management Review,* 19**,** 59 - 67.

The RD&I process involved other stakeholders and was followed by the support processes by other functions in the organisation. The core process of RD&I provided design leadership and intelligence at Philips.

The case study explicitly defined the process and converted it into a graphical format. As seen in figures 9, 10 and 11, the RD&I innovation process divided into three broad actions. The first one called 'future perspective' undertook people and trend research defining possible growth areas, insight for design exploration and explored future areas through design probes (Figure 9). The second is 'theme research' that interrogated growth areas by carrying out experiments and developing knowledge and competencies; it also obtained stakeholder insight on the desirability of the concepts through application experiments (Figure 10). And the third one, called 'design value contribution', supported platforms for new business, by developing stakeholder solutions that contribute defendable intellectual property (IP) and new ideas along with their concept plans (Figure 11).

The next step of RD&I was to enhance this role and turn the design function into a leading functional discipline. As such, design would be considered as one of the core entities generating value for an innovative and creative portfolio. This would ensure that design activities are integrated in the corporate mission statement through a multidisciplinary team working closely with all other recognised functions.

However, contrary to this role, the research saw problems within the function of design. The biggest of all problems was the gap between horizon 1 and horizon 3, i.e. between the thinkers and the practitioners. This gap led to a lack in Philips Design being involved in creating benchmark innovation practices and techniques for breakthrough innovations. The new techniques of innovation were not being documented and passed on into the 'new ways of working[15]' and the 'body of knowledge[16]' within the organisation leading to a lack of communication of the value addition by the design function in the innovation architecture of Philips (Brand, R., 2009).

The design function was seen struggling to become a functional leader at Philips Design as other functions did not recognise its contributions. Additionally, the research also found that other organisations did not recognise design's ability to even become a function. A problem related to the role of design in the eyes of case-study Company A was the business model and its reporting structure. In Company A, the design head reported to the Chief Technology Officer leading to a culture and communication gap in the working style of the design team.

[15] New ways of working – 'New ways of working' is a term used at Philips Design that signifies tools discovered while they carry out their innovation process. These tools help them engage with ground breaking innovative products in new cycles.

[16] Body of knowledge – Philips Design maps and stored all ideas and value generated in the form of process papers and presentations. These papers and presentations are circulated within Philips and stored as their body of knowledge.

Additionally, design was integrated with other functions of the organisation through their communication channels. Despite this, it was given less privilege to play with the assets of the organisation.

Former head of design at Company A thought that there are certain solutions to these problems. One of which was to have a good team with inspiring and intelligent people. On the other hand Company C believed that just having a team is not enough, a team needs fixed roles that each individual plays to accomplish a well-defined goal. Head of consumer research center at Company C agreed that this is not easy to accomplish and stated,

> *"the mission and vision of the company is well defined and everybody knows their roles and acts with responsibility."*

Organisations that depend on technology like Companies B & C, use design as a support function and cannot see design holding a position as a functional leader unless it is shared with other functions like technology and research. The research confirmed early on that technology, research, and development (R&D) were central to value development in most organisations, and for design to lead it had to start by playing the role of a co-function to research and technology. Company B tried to create a collaborative environment between its functions to facilitate a successful work culture through training its employees, identifying roles for its stakeholders, creating rules and a fixed process that helped identify themes for the future portfolio for design projects.

Empirical evidence contradicts design's ability to lead an organisation solely based on its own competencies and knowledge. Nevertheless, design's ability to envisage the future is particularly important for organisations like Philips looking to develop future propositions. Hence, design's involvement at the start of the decision-making process enables the team to imagine the context of all new technological application. The research claims that it is important for one function to lead the decision making process, whilst all functions get equal authority, including design.

Conclusion

FLT is still in its nascent stages of practice in organisations that have applied it in their work culture on a daily basis. This research studied the application of FLT to design and its leadership role and has concluded that the functional leadership of design can be established only when (Aftab, 2012 p. 146);

> *"the organisation and functions within the organisation, i.e.: technology, strategy, futures, and marketing, acknowledge design as one of the core entities generating value for the innovative and creative portfolio. Once design is recognised as a function, it needs an internal team aligned with the strategic decision making team. This design*

team should represent, and ensure, that all expected tasks aligned with the function of design are utilised properly and delivered in the right direction".

This research did not discuss the comparison of different functions and the way they work in relation to design teams. It also did not take into account the people and the skills they require to do the job in design teams at a leading functional level in organisations, making these areas important for further research. Additionally, the study has also opened the door for further research on the use of design as a function and its far- reaching implications for idea generation, the process of innovation and other corporate functions. Due to the limited timeframe of this study, it has not tested FLT in other organisations. Hence, there is a need to explore this field further to enrich the discussion and the current conclusions with further data.

Figures

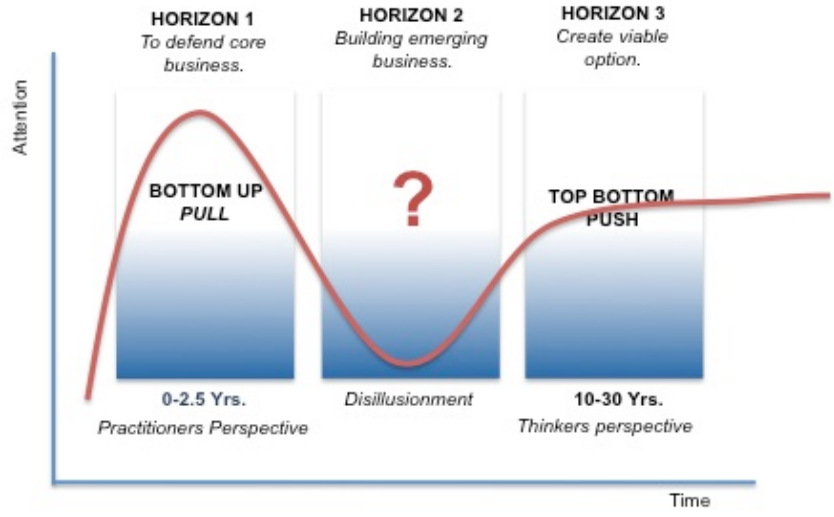

Figure 1: Philips context - Derived from The Alchemy of Growth (Baghai et al., 2000).

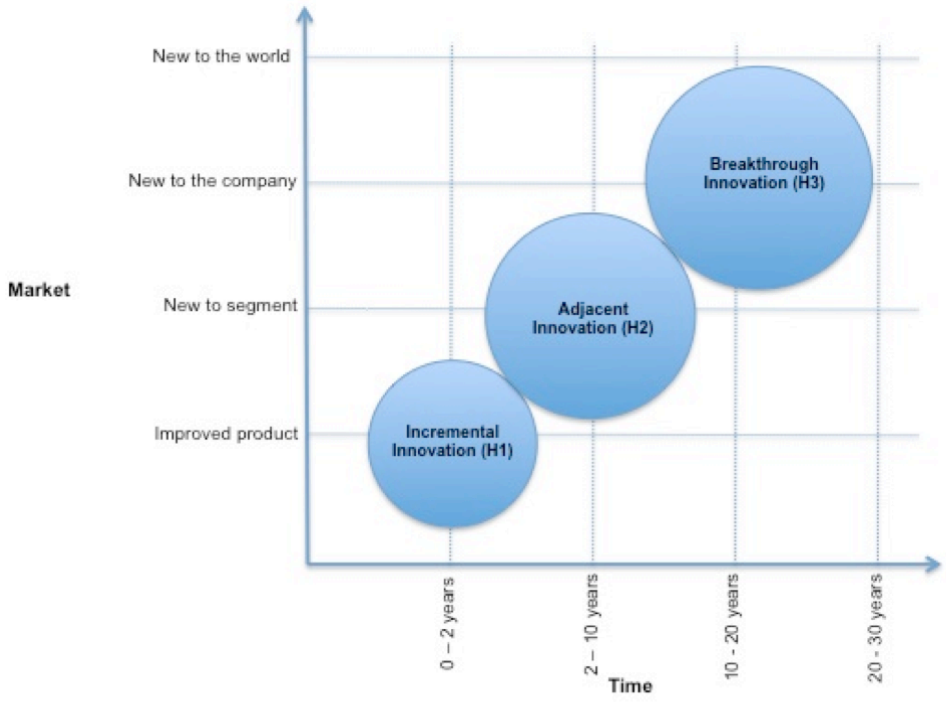

Figure 2: Innovation Cycles at Philips Design (evolved from: (Cawley, 2010b; Gardien, 2009))

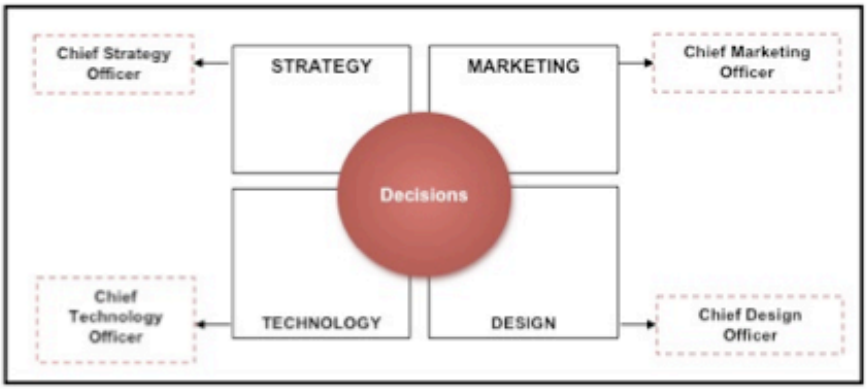

Figure 3: Corporate functions (PIB) Gardien (2009)

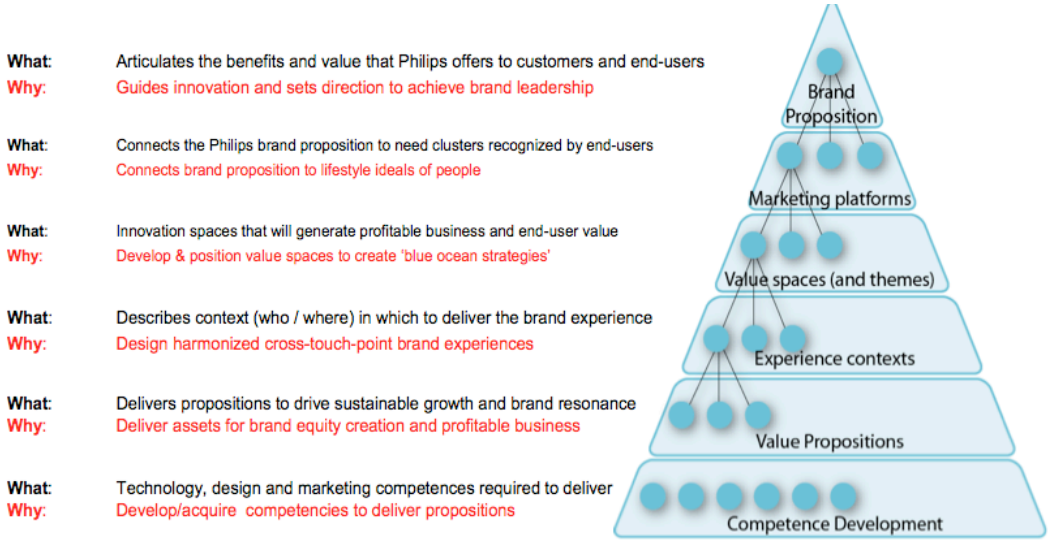

Figure 4: Innovation Architecture at Philips Design promoting Brand Leadership (Brand, R., 2009).

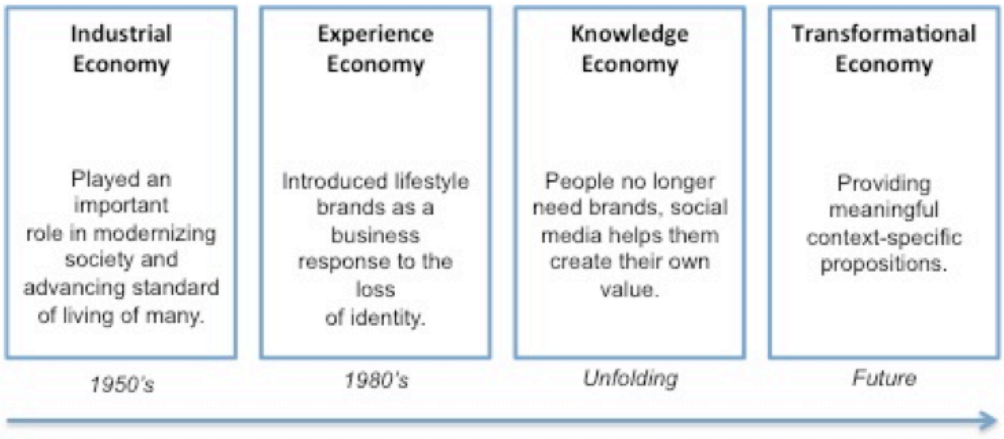

Figure 5: Marketing platforms/paradigms for lifestyle mapping (Brand and Rocchi, 2011).

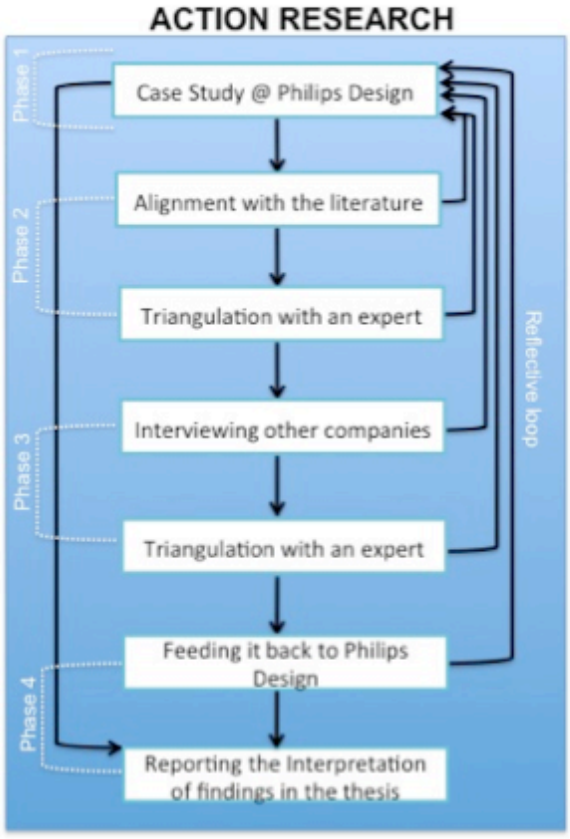

Figure 6: Diagram of the overall work flow in the research.

Figure 7: Mixed method research.

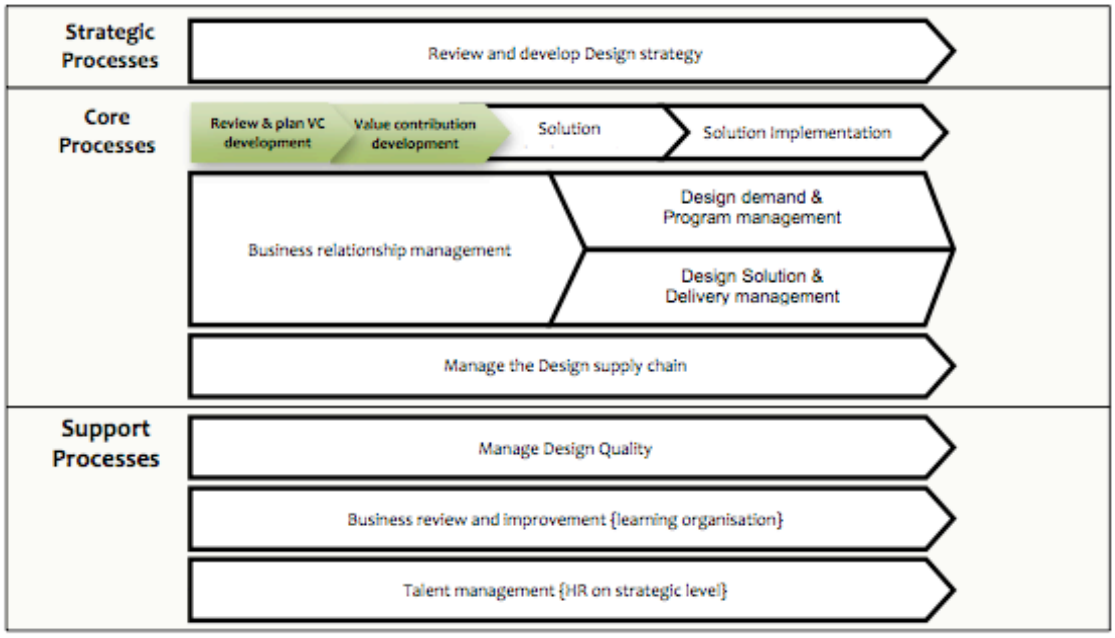

Figure 8: *Design leadership & intelligence used as a core process at the strategic level (Gardien, 2008).*

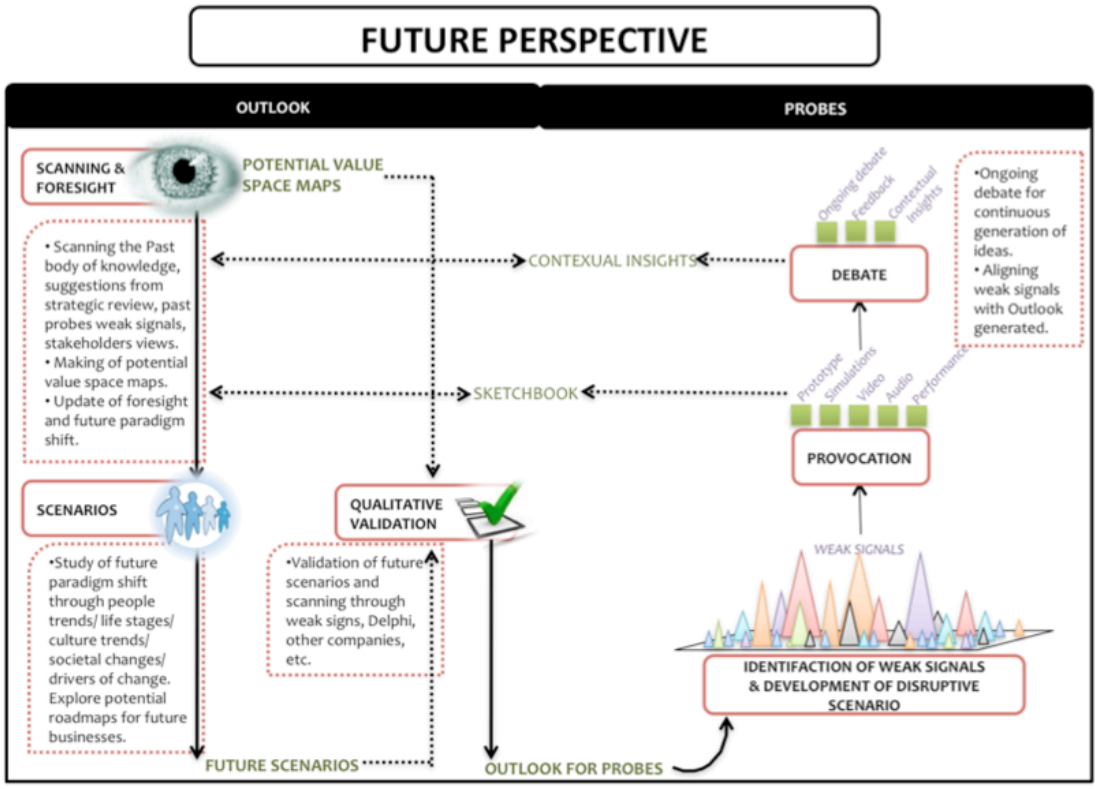

Figure 9: Future Perspective: The first phase of the innovation process map

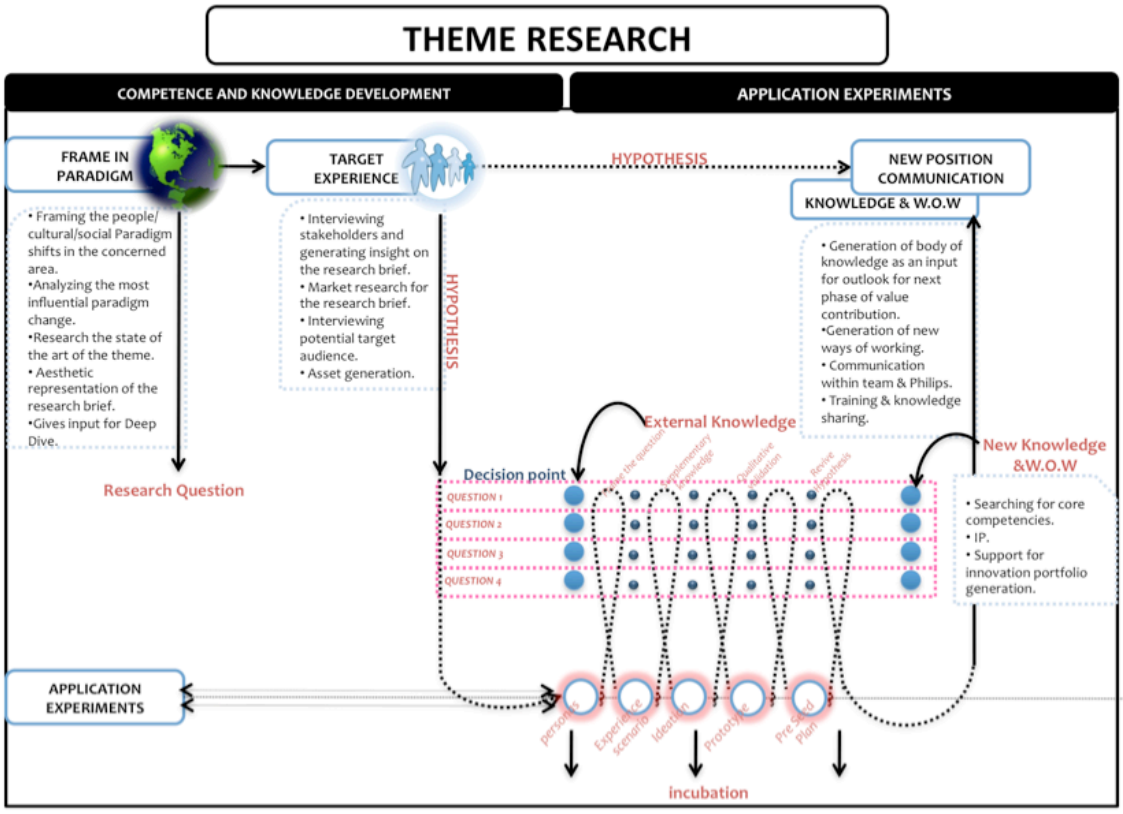

Figure 10: Theme Research: Second phase of the innovation process map.

Figure 11: Design value contribution: Third phase of the innovation process map.

References

Abbing, E. R. & Gessel, C. V. Brand driven innovation: A practical approach to fulfill brand promise through product innovation. . International DMI Education Conference, 14-15 April 2008 2008 Cergy-Pointoise. Zilver Brand Driven Innovation, 1-25.

Adair, J. (1990) *Leadership and motivation: The fifty-fifty rule and the eight key principles of motivating others.*

Aftab, M. (2012) *Design as a functional leader: A case study to investigate role of design as a potential leading discipline in multinational organisations.* PhD, Northumbria University.

(Atc), A. T. C. (2010) *Functional leadership* [Online]. Hampshire: Air Cadets. Available:http://www.airtrainingcorps.org/cadets_area/functional_leadership.htm [Accessed 2nd December 2011].London, Talbot Adair Press.

Baghai, M., Coley, S. & White, D. (2000) *The alchemy of growth,* London, The Orion Publishing Group Ltd.

Brand, R. (2009). *RE: A framework for sustainable brand-directed innovation* Type to Philips-Design.

Brand, R. & Rocchi, S. (2011). *RE: Rethinking value in a changing landscape: A model for strategic reflection and business transformation.* Type to Philips-Design.

Buzan, T. (1989) *Use both sides of your brain,* New York, Plume.

Cawley, J. How ibm's innovation programs led to a "smarter planet" startegy. Open Innovation And New Business Creation, 2010 Billund. 15.

Dreikorn, M. J. (1961) Integration. *In:* Dreikorn, M. J. (ed.) *The synergy of one: Creating high-performing sustainable organisations through integrated performance leadership.* Milwaukee: ASQ.

Fenn, J. & Raskino, M. (2008) Mastering the hype cycle: How to choose the right innovation at the right time, Boston, Harvard Business Press.

Fujimoto, T. Growth of international competition and the importance of effective product development management and the role of design. "Product Strategies for the 1990's" Conference proceedings, 1990 London. The Financial Times.

Gardien, P. (2008). *RE: Design research for innovation.* Type to Design, P.

Gardien, P. (2009). *RE: Philips company innovation.* Type to Philips-Design.

Glanville, R. (2005) Design propositions. *In:* Cyberethics Research, U. a. R. U., Melbourne, Australia (ed.) *Unthinkable Doctorate.* Melborne, Australia: CyberEthics Research, UK and RMIT University, Melbourne, Australia.

Kapferer, J.-N. (2004) *The new strategic brand management: Creating and sustaining brand equity long term,* London, Kogan Page Publishers.

Kotter, J. P. (1998) What leaders really do? *In:* Mintzberg, H. (ed.) *Havard business review on leadership.* Boston: Harvard Business School Press.

Ling, B. (2009) What role does design play whithin your organisation? *In:* Bobby (ed.) *Design leadership.* design sojourn.

Lorenz, C. (1994) Harnessing design as a strategic resource. *Long Range Planning,* 27**,** 73-84.

Lury, C. (2004) *Brands: The logos of global economy,* Abingdon, Routledge.

Man, K. Y. & Jung, M. J. (2008) Bottom-up design leadership as a strategic tool. *Design Management Review,* 19**,** 59 - 67.

Musa, M. (2010) Analysing leadership theory in a social psycological perspective. *In:* Astuti, D. S. R. (ed.). Bandung: Padjadjaran University.

Olins, W. (1978) The corporate personality: An enquiry into the nature of corporate identity.

Sackman, H. (1974) Delphi assessment: Expert opinion, forecasting, and group process.: United States Air force project rand.

Saikaly,F. (2005) Approaches todesign research: Towards the designerly way. Sixth international conference of the European Academy of Design (EAD06). University of the Arts, Bremen, Germany.

Schmitt, B., Simonson, A. & Marcus, J. (1995) Managing corporate image and identity. *Long Range Planning,* 28.

Schön, D. A. (1983) *The reflective practitioner: How professionals think in action*, Basic Books, Inc.

Stevens, J., Moultrie, J. & Crilly, N. (2008) Designing and design thinking in strategy concepts: Frameworks towards an intervention tool. *International DMI Education Conference.* ESSEC Business School, France: University of Cambridge.

Trueman, M. & Jobber, D. (1998) Competing through design. *Long Range Planning,* 31**,** 594-605.

Verganti, R. (2009) *Design driven innovation- changing the rules of competition by radically innovating what things mean,* Harvard, Harvard Business School Publishing corporation.

Yee, J. S. R. Capturing tacit knowledge: Documenting and understanding recent methodological innovation used in design doctorates in order to inform postgraduate training provision. Experiential Knowledge Conference, 19th June 2009 London. London MetropolitanUniversity.

Yin, R. K. (2003) Applications of case study research, New Delhi, SAGE Publications, 2, 5, 22, 199.

Zaccaro, S. J. & Klimoski, R. J. (2001) *The nature of organisational leadership: Understanding the performance imperatives confronting today's leaders,* San Francisco, Jossey-Bass Inc.